

CLAIMS

1. A method of making a solid-liquid filtration cloth, the method comprising:

weaving a solid-liquid filtration cloth (7) comprising a first surface (14) and a second surface (16);

employing a plurality of longitudinal polymer yarns (12) and a plurality of cross-direction polymer yarns (13a, 13b, 13c) in the weaving; and

providing the solid-liquid filtration cloth (7) with a permeability allowing liquid in a mixture to be solid-liquid filtered to permeate through the cloth and, on the other hand, preventing solids from the mixture from passing the cloth,

characterized by arranging at least the first surface (14) of the cloth (7) to be corrugated, whereby the cloth (7) has at least one outermost contact surface provided with corrugations opening away from the cloth (7).

2. A method as claimed in claim 1, **characterized** by arranging the second surface (16) of the cloth (7) substantially even.

3. A method as claimed in claim 1, **characterized** by arranging the first surface (14) and the second surface (16) of the cloth (7) corrugated.

4. A method as claimed in any one of the preceding claims, **characterized** by

weaving a filtration portion (15) having a permeability suitable for solid-liquid filtration on the side of the first surface (14) of the cloth (7),

weaving highly heat-shrinkable cross-direction polymer yarns (13b) having a first length (L1) during the weaving into the cloth (7),

binding the highly heat-shrinkable yarns (13b) to the longitudinal yarns (12) at binding points (18),

employing a free run of the length of a plurality of longitudinal yarns (12) on the highly heat-shrinkable yarns (13b) between the binding points (18),

heat-treating the cloth (7) after the weaving, whereby, after the heat treatment, the high-shrink yarns have a second length (L2) having a magnitude smaller than that of the first length (L1), and

letting the cloth (7) shorten considerably in proportion to the change in the length of the highly heat-shrinkable yarns (13b), whereby the filtration portion (15) in the cloth (7) obtains a corrugated shape as a result of shrink-

age.

5. A method as claimed in any one of claims 1 to 3, **characterized** by

weaving a filtration portion (15) having a permeability suitable for solid-liquid filtration at least on the side of the first surface (14) of the cloth (7),

weaving stretchable yarns (13b) into the cloth (7), the yarns being subjected to a longitudinal force during the weaving in such a manner that the stretchable yarns (13b) have a first length (L1) during the weaving,

binding the stretchable yarns (13b) to the longitudinal yarns (12) of the filtration portion (15) at binding points (18),

employing a free run of the length of a plurality of longitudinal yarns (12) on the stretchable yarns (13b) between the binding points (18),

releasing the cloth (7) after the weaving, whereby the stretchable yarns (13b) obtain a second length (L2) having a magnitude smaller than that of the first length (L1), and

letting the cloth (7) shorten proportionally to the change in the length of the stretchable yarns (13b), whereby the filtration portion (15) in the cloth (7) obtains a corrugated shape.

6. A solid-liquid filtration cloth comprising:

a first surface (14) and a second surface (16);

a plurality of longitudinal polymer yarns (12) and a plurality of cross-direction polymer yarns (13a, 13b, 13c);

and the solid-liquid filtration cloth (7) having a permeability allowing liquid in a mixture to be solid-liquid filtered to permeate the cloth and, on the other hand, preventing solids from the mixture from passing the cloth,

characterized in that at least the first surface (14) of the cloth (7) is provided with a corrugated outermost contact surface provided with a plurality corrugations opening away from the cloth (7).

7. A solid-liquid filtration cloth as claimed in claim 6, **characterized** in that the first surface (14) and the second surface (16) of the cloth (7) have a corrugated shape.

8. A solid-liquid filtration cloth as claimed in claim 6 or 7, **characterized** in that

a filtration portion (15) suitable for solid-liquid filtration and comprising a plurality of cross-direction yarns (13a) is provided on the side of the first surface (14) of the cloth (7),

the cloth (7) comprises a portion (17, 20) composed of yarns (13b) having a changing length,

the corrugated surface is provided with crests of corrugations, and

at the crests, a maximum distance (P) between the cross-direction yarns (13a) and the yarns (13b) having a changing length of the filtration portion (15) is at least 1.5 mm.

9. A solid-liquid filtration cloth as claimed in any one of claims 6 to 8, **characterized** in that

at least the side of the first surface (14) of the cloth is provided with a filtration portion (15) having a corrugated shape and comprising crests and bottoms of corrugations,

the cloth (7) comprises highly heat-shrinkable cross-direction yarns (13b) whose length is shortened in heat treatment subsequent to weaving,

the highly heat-shrinkable yarns (13b) are bound to the filtration portion (15) at binding points (18), and

the binding points (18) are located at the bottoms of the corrugations.

10. A solid-liquid filtration cloth as claimed in any one of claims 6 to 8, **characterized** in that

at least the side of the first surface (14) of the cloth is provided with a filtration portion (15) having a corrugated shape and comprising crests and bottoms of corrugations,

the cloth (7) comprises cross-direction stretchable yarns (13b) having, after weaving, a rest length shorter than the length of the yarns during weaving,

the stretchable yarns (13b) are bound to the filtration portion (15) at binding points (18), and

the binding points (18) are located at the bottoms of the corrugations.

11. A solid-liquid filtering device comprising:

at least one filter surface (6) having a plurality of openings (5);

means for moving the filter surface (6) in a rotational direction (A) during the filtration; and

a solid-liquid filtration cloth (7) arranged against each filter surface (6), the solid-liquid filtration cloth (7) having a permeability arranged to let through liquid in a mixture to be solid-liquid filtered and, on the other hand, ar-

ranged to prevent solids from the mixture from passing the cloth,

characterized in that at least an outer surface (14) of the solid-liquid filtration cloth (7) arranged against the filter surface (6) is corrugated, at least a contact surface arranged against the mixture to be filtered comprising a plurality of corrugations opening away from the filter cloth (7).

12. A solid-liquid filtering device as claimed in claim 11, **characterized** in that

the solid-liquid filtering device is a drum filter whose perimeter is arranged to serve as a filter surface and which is arranged to be rotated around its longitudinal axis in direction (A), and

crests of corrugations on the outer surface (14) of the cloth (7) are arranged substantially parallel to the rotational direction (A) of the filter surface (6).

13. A solid-liquid filtering device as claimed in claim 11, **characterized** in that

the solid-liquid filtering device is a drum filter whose perimeter is arranged to serve as a filter surface and which is arranged to be rotated around its longitudinal axis in direction (A), and

crests of corrugations on the outer surface (14) of the cloth (7) are arranged transversely relative to the rotational direction (A) of the filter surface (6).

14. A solid-liquid filtering device as claimed in claim 11, **characterized** in that

the solid-liquid filtering device is a disc filter, a plurality of sector elements on whose perimeter constitute a disciform structure, and wherein the flank sides of the sector elements constitute the filter surfaces, and

crests of corrugations on the outer surface (14) of the cloth (7) are arranged substantially in the radial direction of the sector element.